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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/628,986      | 07/28/2003  | Bruce Whitefield     | 03-0593 81577       | 7146             |

7590 04/06/2005

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EXAMINER

SIEK, VUTHE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2825

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/628,986 | <b>Applicant(s)</b><br>WHITEFIELD ET AL. |  |
|                              | <b>Examiner</b><br>Vuthe Siek        | <b>Art Unit</b><br>2825                  |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,11 and 13 is/are rejected.
- 7) ☒ Claim(s) 2,4-10,12 and 14-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/12/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This office action is in response to application 10/628,986 filed on 7/28/2003.

Claims 1-20 remain pending in the application.

#### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Thus, the abstract of the disclosure is objected to because the abstract is the same as claim 1. Correction is required. See MPEP § 608.01(b).

#### ***Claim Objections***

3. Claim 19 is objected to because of the following informalities: line 1, "Claim 10" should be --Claim 11--, since Claim 19 must depend on Claim 11. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 11 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over Vo et al. (US 2005/0022085).

6. As to claims 1 and 11, Vo et al. teach a method for isolating failed routing resources (failed test paths) on a programmable circuit die (IC die) (Fig. 1-3 and its description) comprising generating a navigation map of test paths for an IC die (0025); selecting a grid spacing to define a grip map of cell locations from the navigation map for each of the test paths (0022-0034). The connectivity graph is a database that stores a map of all the possible programmable connections between routing resources on the programmable IC. The programmable interconnections are programmable by RAM bit address (RBA) bits to connect routing wires in the test paths, where each set of RBA bits also includes an address of a programmable interconnection that indicates its location on the programmable IC. Failing test patterns includes RBA program bits that indicates how the programmable connections are programmed in the failed test paths. The routing resources define a grid spacing to define a grid map of cell locations. Many of the test paths that failed are routed through the same interconnect resources. Thus, there is overlap between routing resources that are used in the test paths. The statistical failure tool (SFI) perform statistical analysis to determine which of the routing resources appear most frequently in the failed test paths. The resources can be grouped by individual resources or by resource types. The SFI tool orders the overlapping resources according how many times each resources appeared in one of

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the failed test paths. therefore, by identifying routing resources that overlap in the most failed test paths, the probability is greater that one or more the identified overlapping resources contain defects that causing the erroneous test results. As such, Vo et al. teach isolating failed test paths in order to accurately provide better result of failed test paths. Vo et al. does not explicitly teach calculating a value that is a difference between a total number of the test paths interconnecting each of the cell locations and a failed number of the test paths intersecting each of the cell locations. From the teachings of Vo et al., it would have obvious to one ordinary skill in the art the isolation of failed test paths would have included such calculated value as claimed because the difference value would likely be used to define a greater probability to define a defect of the programmable IC.

7. As to claims 3 and 13, since grid spacing is used for routing test paths including failed test paths, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the grid spacing of 50 to 200 microns in order to meet design criteria to thereby providing sufficient channel for routing test paths to define defect of the programmable IC die.

***Allowable Subject Matter***

8. Claims 2, 4-10, 12 and 14-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vuthe Siek whose telephone number is (571) 272-1906. The examiner can normally be reached on Increase Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vuthe Siek



VUTHE SIEK  
PRIMARY EXAMINER